

**A. CLASSIFICATION OF SUBJECT MATTER**

Int.Cl<sup>7</sup> C23C14/34, C22C9/01, 9/02, H01L21/28, 21/285, 21/3205

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> C23C14/00-14/58, C22C9/01, 9/02, H01L21/28, 21/285,  
21/3205

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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Kokai Jitsuyo Shinan Koho	1971-2004	Jitsuyo Shinan Toroku Koho	1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI/L[C23C-014/34 and {C22C-009/00 or (H01L-021/28 and copper(W)  
alloy))}]

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2002-294438 A (Mitsubishi Materials Corp.), 09 October, 2002 (09.10.02), Claim 1; Par. Nos. [0009], [0010], [0015] (Family: none)	1-14
Y	JP 63-65039 A (Furukawa Electric Co., Ltd.), 23 March, 1988 (23.03.88), Claims (Family: none)	1-14
Y	US 4822560 A (Furukawa Electric Co., Ltd.), 18 April, 1989 (18.04.89), Claim 1; column 1, lines 7 to 17 & JP 6-207232 A Claim 1; Par. No. [0001]	4-14

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:  
 "A" document defining the general state of the art which is not  
 considered to be of particular relevance  
 "E" earlier document but published on or after the international filing  
 date  
 "L" document which may throw doubts on priority claim(s) or which is  
 cited to establish the publication date of another citation or other  
 special reason (as specified)  
 "O" document referring to an oral disclosure, use, exhibition or other  
 means  
 "P" document published prior to the international filing date but later  
 than the priority date claimed

"T" later document published after the international filing date or  
 priority date and not in conflict with the application but cited to  
 understand the principle or theory underlying the invention  
 "X" document of particular relevance; the claimed invention cannot be  
 considered novel or cannot be considered to involve an inventive  
 step when the document is taken alone  
 "Y" document of particular relevance; the claimed invention cannot be  
 considered to involve an inventive step when the document is  
 combined with one or more other such documents, such  
 combination being obvious to a person skilled in the art  
 "&" document member of the same patent family

Date of the actual completion of the international search  
20 January, 2004 (20.01.04)

Date of mailing of the international search report  
03 February, 2004 (03.02.04)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/13251

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 61-231131 A (Kobe Steel, Ltd.), 15 October, 1986 (15.10.86), Full descriptions (Family: none)	1-11